

**Aluminium@ foil for electrolytic capacitors - is vacuum-coated on both sides with aluminium@/alumina insulating film**

**Patent number:** DE4127743  
**Publication date:** 1993-03-04  
**Inventor:** NEUMANN MANFRED DR (DE); HOETZSCH GUENTER DR (DE); MORGNER HENRY (DE); PAUL MANFRED DR (DE); WEILAND HEINRICH (DE)  
**Applicant:** FRAUNHOFER GES FORSCHUNG (DE)  
**Classification:**  
- **international:** C23C14/16; C23C14/32; H01G9/04; H01G9/24  
- **european:** C23C14/02A2, C23C14/14, C23C14/24, H01G9/04C, C23C14/08D  
**Application number:** DE19914127743 19910822  
**Priority number(s):** DE19914127743 19910822

**Abstract of DE4127743**

Al foil for electrolytic capacitors has an increased surface capacitance. Pore-free layers contg. Al and Al oxide are deposited on both sides of a flat Al foil. The Al is present as columnar crystals, which are surrounded by the Al<sub>2</sub>O<sub>3</sub> and electrically insulated from each other.

Mfg. the capacitors comprises vacuum-coating on both sides with an Al film at an oxygen partial pressure of 0.0001 - 0.002 mbar and a coating rate of 200-5000 nm/sec. Angle of impact of the Al particles at the start of the coating process is greater than 30 deg.

The Al/alumina film contains valve metals e.g. Ti, Ta, or Zr or their cpds. and/or stabilising elements such as P, Cr or their cpds. These components are added to the Al to be evaporated, co-evaporated from independent sources, or incorporated after vacuum-coating by treatment with an aq. stabilising soln.

USE/ADVANTAGE - Al foil obtd. is for electrolytic capacitors, has increased surface capacitance and stability. No need to use corrosive or toxic etch solns. or electrolysis baths. Conventional Al vacuum-coating equipment is used

---

Data supplied from the **esp@cenet** database - Worldwide